Summary

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Antimicrobial effect of agents predestined for prediction of contamination I
Dissertation

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Aim of desertation: Firstly, developing a suitable metodology of testing antimicrobial activity of coats containing Photocatalytic nanoparticles of titanum and zinc oxides, against G+, G- bacteria and yeast plants. Secondly, verifying antimicrobial effectiveness of coating material provided by Synpo Pardubice, Inc., and identified as P-41 and P-55.

Methods:

1. Coats were irradiated with UV radiation of wavelengths close to visible radiation, then contaminated with microbial suspension. Samples were collected at different intervals, and antimicrobial effectiveness of coatings was evaluated on the basis of the deducation of CFU.

2. Coats contaminated with microbial suspension were irradiated with UV radiation of wavelenghts close to visible radiation while they were being contaminated. Samples were collected at different intervals, and antimicrobial effectiveness of coatings was evaluated on the basis of the deducation of CFU.

Results: Influence of UV-VIS radiation on the surface films and high antimicrobial effectiveness against gram-negative bacteria was proved as well as relatively good effectiveness against gram-positive bacteria. Effectiveness against yeast plants was relatively lower.

Conclusion: Application of these coatings seems to be convenient in hospital environment, where there is the most frequent occurence of nosocomial infections and multiresistant strains.